Instructions and Itinerary for Geologic Field Trip
Illinois Academy of Science
Carbondale, May 7, 1938

Sponsored by State Geological Survey
Leaders: - George E. Ekblaw, J. E. Lamar, and H. R. Wanless

General Instructions:

1. Please be prepared to leave promptly at 9:00 a.m.
2. Cars will assemble east of east entrance of Main Hall, Southern Illinois State Normal University, on east side of main drive, headed northeast.
3. Participants will provide themselves with lunches before starting.
4. At scheduled stops, please assemble promptly near leader to hear his discussion before scattering for individual examination of points of interest; also please be prompt to leave upon signal. This is especially desirable if the group is large.

Instructions for car drivers:

To expedite the trip and for safety, please

1. Identify your car by attaching one of the tags provided.
2. Have your car in line before the trip starts.
3. Follow carefully and keep fairly close to the car ahead, with due regard to safety.
4. Keep all gaps in the caravan closed, especially while traveling through the city, in order to prevent other cars from inserting themselves in the caravan or crossing the caravan at intersections.
5. Watch the cars ahead and behind for signals.
6. Keep your place in the caravan so far as possible; do not attempt to pass ahead of any in the caravan unless they drop out of line, nor to gain an advanced position at stops.
7. If for accident or other reason you drop out of line, let those following you proceed, except for such help as may be needed; in case of accident to the rear car of the caravan, signal those ahead.
8. Any car dropping out of line shall take up the rear when rejoining the caravan.
9. When parking in line at stops, draw close to the car ahead; when parking parallel, do not leave unnecessary space between cars.
10. One passenger in each car, preferably sitting beside the driver, should read the itinerary and keep the driver adequately informed with regard to stops, turns, etc.

ILLINOIS STATE GEOLOGICAL SURVEY
Urbana, Illinois

OIL AND GAS PRODUCING STRATA IN ILLINOIS

System or Series	Formation*	Local Name and Area Productive
Pleistocene		Gas from glacial drift
Pennsylvanian	McLeansboro sh., ss., thin ls., and coal	Upper Siggins, "Gas," - Clark County fields
	Carbondale sh., ls., ss., coals	Casey, Claypool, Upper Partlow, Lower Siggins, "Bellair 500'" - Clark County Dykstra, Wilson - Marion County
	Pottsville ss., sh., thin coals	Lower Partlow - Clark County Robinson - Crawford County Bridgeport - Lawrence County Buchanan - Lawrence County Biehl & Jordan - Wabash County Petro - Marion County
Chester (Upper Mississippian) Series	Kinkaid ls., sh. Degonia ss. Clore ls., sh. Palestine ss. Menard ls., sh. Waltersburg ss. Vienna ls., sh. Tar Springs ss. Glen Dean ls., sh. Hardinsburg ss. Golconda ls., sh. Cypress ss.	Kirkwood - Lawrence County Carlyle - Clinton County Upper Lindley - Bond County
	Paint Creek ls., sh. Bethel ss. Renault ls., sh., ss. Aux Vases ss.	Tracey - Lawrence County Benoist - Marion County
Lower Mississippian Series	Ste. Genevieve ls.	McClosky sand - Wayne, Richland, Clay, and Lawrence counties
	St. Louis ls. Salem ls.	Westfield lime - Clark County
	Warsaw ls. Keokuk ls. Burlington ls. Fern Glen ls.	"Mississippi Lime"
	Kinderhook sh., ls., ss.	Carper sand - Clark County
Mississippian and Devonian	Chattanooga - New Albany sh.	
Devonian	Limestone	"Niagaran" Martinsville pool - Clark County "Hoing sand" Plymouth-Colmar field - McDonough County
Silurian	Dolomite	(Hunton limestone of Oklahoma)
Ordovician	Maquoketa sh. Kimmswick ls.	"Trenton" Martinsville pool - Clark County
	Plattin ls. Joachim ls.	Dupo field - St. Clair County (Viola limestone of Oklahoma)
	St. Peter ss.	(Wilcox sand of Oklahoma)

*ls. = limestone; ss. = sandstone; sh. = shale.

Itinerary

0.0	Exit of College Drive, at intersection of West Grand and South Illinois avenues (U. S. Highway No. 51). Set speedometer. Straight ahead (north) on South Illinois Avenue = U. S. Highway No. 51. This area is a dissected plain of glacial drift of Illinoian age.
0.7	Stop sign - State Highway No. 13. Turn right (east) on State Highway No. 13 - caution - Illinois Central Railroad crossing, 5 tracks. The east part of Carbondale is situated on a partly dissected "high-level" terrace of Early Sangamon (?) age at elevation of 400-420 feet.
1.2	Descent from terrace to valley-flat of Piles Fork.
1.4	Crossing Piles Fork. Note valley scarps cut into terrace to right (south).
1.7	Caution - sharp turn right (south). Reascent to high-level terrace.
1.8	Caution - sharp turn left (east). Note that high-level terrace is considerably dissected.
2.9	Broad curve left (northeast).
3.1	Bridge over Crab Orchard Creek. Note broad valley bottom, elevation 380± feet, with low (5+ feet) terrace to southeast.
3.7	Curve right (east). Now on low terrace.
3.9	Ascent from terrace to till upland. Note breadth of Crab Orchard Creek valley to right (south).
4.3	Curve left (northeast). Note coal-mine tipple on right (southeast).
4.6	Slow - turn right (south) off highway to surfaced road.
6.3	Stop No. I. Crab Orchard Creek damsite. Construction features of the dam will be discussed by Mr. P. B. Wilson, Assistant Chief Engineer of the project. Geological features exposed; relations of valley-bottom and terraces; alluvial gravel composition of "high-level" terrace; Illinoian glacial drift; two sets of glacial striae, respectively S. 10° W. and S. 15-20° E., the latter younger, and iron-oxide "enamel" on glacially polished surface of exposed sandstone; evidence of pre-glacial age of valley; Curlew (?) sandstone of Carbondale formation of Pennsylvanian ("Coal Measures") system. Return to Carbondale.
7.9	Stop sign - State Highway No. 13. Turn left (southwest) on highway.
9.4	Bridge over Crab Orchard Creek.
10.7	Caution - sharp turn right (north).
10.8	Caution - sharp turn left (west).
11.7	Caution - Illinois Central railway crossing.

11.8 Stop sign - U. S. Highway No. 51 (South Illinois Avenue). Turn left (south) on highway.

12.5 Turn right (west), keeping on highway (West Grand Avenue).

12.6 Turn left (south), on highway.

14.5 and subsequently. - Caution - Drivers of cars should be especially attentive for the rest of the trip, as the route is along highways that have numerous curves and hills, all of which limit visibility distances.

16.8 Stop No. II. Calcareous sandstone, marked at top and bottom by thin siliceous limestone beds with rectangular fracture, underlain by laminated siltstone (shale) also broken into rectangular masses, and overlain by sandstone, all belonging to the Pottsville formation of the Pennsylvanian system.

18.8 Crossing the approximate southern boundary of glaciation.

20.8 Slow - turn left (east) off highway on stone road to Makanda and Giant City State Park.

20.9 Caution - steep downgrade ahead - shift to second gear. Makanda sandstone exposed in cuts on either side of road.

21.2 On left (north) side of road, small mine in coal bed under the massive Makanda sandstone and at top of Drury shale members of Pottsville formation.

21.8 Caution - steep downgrade ahead, into Makanda - shift to second gear. Again Makanda sandstone on both sides of road.

22.6 Caution - S-turn across Illinois Central railway in Makanda.

22.7 Caution - rock-filled chuck holes in bituminous pavement.

23.1 Turn right (east) - entrance to Giant City State Park. Cliffs of Makanda sandstone on either side of valley, which marks approximate southern limit of glaciation.

23.6 Stop No. III. Coal bed and associated members of Pottsville formation. Glacial boundary.

23.8-.9 Excellent examples of overhangs and minor cavities caused by stream erosion and abrasion.

25.4 Y-road - turn left (east).

25.7 Y-road - turn right (east)

26.0 Y-road - turn right (south).

26.5 Park lodge. This is a splendid piece of architectural use of local materials and local labor. The walls are constructed of sandstone quarried in the park and the wood is hewed from native trees. Note fire-tower to left (southeast).

26.6 Caution - steep downgrade - shift to second gear.

27.5 Stop No. IV. Luncheon. Please use group of tables south of parking space. After lunch, assemble in large shelter for general discussion of local geology. After the discussion, Giant City itself will be visited. Retrace route to U. S. Highway 51.

30.2 Leaving Giant City State Park - turn left (south).

30.7 Caution - S-curve across Illinois Central railway in Makanda.

31.7 Caution - steep downgrade ahead - shift to second gear.

32.5 Stop - U. S. Highway No. 51. Turn left (south).

33.0 Note splendid view to southwest.

34.2 Fire-tower at Giant City may be seen far to left (east), across broad valley.

34.7 Note profile of cuesta-hills to southeast.

36.7 On right (west) side of road, a row of deep sink-holes on the north side of side-road to west marks the position of the Kincaid limestone formation of the Chester series (Upper Mississippian). The hill now being descended is capped with basal Pennsylvanian sandstone, overlying the Kincaid limestone. The sandstone forms a steep bluff along the north side of the sink-holes.

37.7 Stop No. V. Degonia sandstone overlying Clore limestone, both of the Chester series.

39.0 Slow - caution - sharp turn right (west) off highway on gravel road to Alto Pass.

40.0 Stop No. VI. View of physiographic features to northeast and to west, reflecting differences in geological formations.

40.3 Cuts in thick loess deposits which mantle the hills.

41.5 View to west (left) to Bald Knob, the highest point in southwestern Illinois.

43.3 Stop No. VII. Pebbly basal Pennsylvanian sandstone lying unconformably on non-pebbly Degonia sandstone. View of physiographic features reflecting succession of geologic formations southwest across valley to Bald Knob.

43.6 Caution - turn left (south) across Mobile and Ohio railway in Alto Pass. Turn right (west) at Y on south side of railway.

44.6 Y - take left (south) road.

45.1 Y - take left (south) road.

45.9 Y - take right (north) road.

46.3 Approximate position of Alto Pass fault.

46.7 T-road - turn left (east).

47.8 Stop No. VIII. Quarry-pit in weathered Clear Creek chert formation of the Devonian system.

48.4 Stop No. IX. Bald Knob. View of physiographic features.